Amendments to the Claims:

The text of all pending claims, (including withdrawn claims) is set forth below. Canceled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (canceled), (withdrawn), (new), (previously presented), or (not entered).

Applicants reserve the right to pursue any canceled claims at a later date.

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1 – 23 (canceled)

24. (previously presented) A system for influencing an induction gas temperature in a combustion chamber of an internal combustion engine, comprising:

a compression device to compress induced fresh air, the fresh air having a first temperature (T1) before compression;

an expansion device that causes an expansion of the compressed induced fresh air, with the compressed and subsequently expanded fresh air having a second temperature (T2) greater than the first temperature (T1);

a temperature sensor to record the second temperature (T2) that is arranged in the direction of flow of the fuel/air with reference to the expansion device; and

an exhaust gas recirculation device to combine exhaust gas from an earlier combustion cycle with the fresh air to form a mixture featuring exhaust gas and fresh air;

an exhaust gas cooler connected to the exhaust gas recirculation device to influence the temperature of the exhaust gas by controlling the heat flow within the gas exhaust gas recirculation device;

a control/regulation/computation device which includes a first device for calculating a required exhaust gas temperature, the first device connected to a second device for calculating a coolant through-flow of the exhaust gas cooler, the second device is connected via a coolant flow regulation path to a coolant flow controller;

wherein measured values and set-point values for calculating the required exhaust temperature are assigned to engine operating variables selected from the group consisting of: exhaust gas temperature, recirculated exhaust gas mass, recirculated exhaust gas quantity, air/fuel temperature, air/fuel mass, air/fuel quantity, induction gas temperature, induction gas mass, induction gas quantity, coolant temperature, oil temperature of the coolant, oil flowing through the exhaust gas cooler, coolant mass, oil mass, coolant quantity, oil quantity of the coolant, and oil flowing through the exhaust gas cooler; and

wherein the control/regulation/computation device uses the measured values, set-point values, and the temperature increase of the fresh air from T1 to T2 to explicitly influence the combustion chamber temperature by controlling the heat flow to the combustion chamber and thereby the energy level in the combustion chamber.

25. (canceled)

26. (previously presented) The system in accordance with claim 24, wherein the compression device is an exhaust gas turbocharger.

27. (previously presented) The system in accordance with claim 24, wherein the compression device is a compressor.

28. (previously presented) The system in accordance with claim 24, wherein the expansion is performed on a throttle valve.

29. (previously presented) The system in accordance with claim 24, wherein a coolant setting valve is provided in the coolant flow regulation path to set the coolant mass flow.

30. (previously presented) The system in accordance with claim 24, wherein the exhaust gas cooler is arranged in a separate heat exchanger circuit.

31. (previously presented) The system in accordance with claim 24, wherein the exhaust gas cooler is arranged in an engine coolant circuit.

32. (previously presented) The system in accordance with claim 24, wherein the exhaust gas cooler is designed as an engine or transmission oil heat exchanger respectively.

33. (canceled)

34. (previously presented) The system in accordance with claim 24, wherein a temperature sensor to record the air/fuel temperature, a temperature sensor to record the exhaust gas temperature at the engine exhaust, an air mass or quantity measurement device respectively to record the air/fuel mass or quantity, and an exhaust gas mass or quantity measuring device to record the exhaust gas mass or quantity are provided.

35. (previously presented) The system in accordance with claim 24, wherein the induction gas temperature is calculated in accordance with equation

$$T_{ASG} = \frac{\dot{m}_{FG} T_{FG} C_{p,FG} + \dot{m}_{AG} T_{AG} C_{p,AG}}{\dot{m}_{FG} C_{p,FG} + \dot{m}_{AG} C_{p,AG}}$$

with

$\dot{m}_{FG}$: Air/fuel mass flow

$\dot{m}_{AG}$: Exhaust gas mass flow

T_{FG}: Air/fuel temperature

T_{AG}: Exhaust gas temperature

T_{ASG}: Induction gas temperature

$c_{p,FG}$: Heat capacity of the air/fuel mixture

$C_{p,AG}$: Heat capacity of the exhaust gas.

36. (previously presented) The system in accordance with claim 24, wherein the exhaust gas temperature at the heat exchanger outlet is calculated using the following equation system:

$$|\Delta \dot{Q}_{KM}| = |\Delta \dot{Q}_{AG}| = \dot{Q}_{WT};$$

$$\Delta\dot{Q}_{KM} = \dot{m}_{KM} C_{p,KM} \left(T_{KM,OUT} - T_{KM,IN}\right);$$

$$\Delta\dot{Q}_{AG} = \dot{m}_{AG} C_{p,AG} \left(T_{AG,IN} - T_{AG,OUT}\right);$$

$$\dot{Q}_{WT} = kA\Delta T_m$$

with

$\dot{Q}$: Heat flow

KM: Coolant

AG: Exhaust gas

WT: Heat exchanger

C_p: Heat capacity

k: Heat transfer coefficient of the heat exchanger

A: Heating surface of the heat exchanger

ΔT_m Mean logarithmic temperature difference.

37. (currently amended) A method for influencing an induction gas temperature of an internal combustion engine, comprising:

compressing induced fresh air having a first temperature (T1) before compression;

expanding the compressed induced fresh air such that the compressed and subsequently expanded fresh air has a second temperature (T2) greater than the first temperature;

recording the second temperature (T2) after the expansion;

recirculating exhaust gas with an exhaust gas recirculation device to combine exhaust gas from an earlier combustion cycle with the fresh air to form a mixture featuring exhaust gas and fresh air;

cooling exhaust gas with an exhaust gas cooler, the exhaust gas cooler connected to the exhaust gas recirculation device to influence the temperature of the exhaust gas by controlling the heat flow within the gas exhaust gas recirculation device;

providing a control/regulation/computation device which includes a first device and a second device; and

~~for~~ calculating a required exhaust gas temperature with the first device, the first device connected to ~~a~~ the second device for calculating a coolant through-flow of the exhaust gas

cooler, the second device is connected via a coolant flow regulation path to a coolant flow controller~~;~~,

wherein the calculating the required exhaust temperature is based on determining/sensing/measuring/computing measured values and set-point values of ~~for calculating the required exhaust temperature are assigned to~~ engine operating variables selected from the group consisting of: exhaust gas temperature, recirculated exhaust gas mass, recirculated exhaust gas quantity, air/fuel temperature, air/fuel mass, air/fuel quantity, induction gas temperature, induction gas mass, induction gas quantity, coolant temperature, oil temperature of the coolant, oil flowing through the exhaust gas cooler, coolant mass, oil mass, coolant quantity, oil quantity of the coolant, and oil flowing through the exhaust gas cooler~~;~~, and

wherein ~~the control/regulation/computation device uses the measured values, set-point values, and the temperature increase of the fresh air from T1 to T2 to explicitly influence the combustion chamber temperature by controlling the heat flow to the combustion chamber and thereby the energy level in the combustion chamber~~explicitly influencing the combustion chamber temperature by controlling the heat flow to the combustion chamber and thereby the energy level in the combustion chamber are based on/depends upon the determined/sensed/computed measured values, the determined/sensed/computed set-point values, the determined/sensed/computed measured values temperature increase of the fresh air from the first temperature (T1) to the second temperature (T2).

38. (canceled)

39. (currently amended) The method in accordance with Claim 37, wherein the ~~compression~~ compressing step is performed by an exhaust gas turbocharger.

40. (currently amended) The method in accordance with Claim 37, wherein the ~~compression~~ compressing step is performed by a compressor.

41. (currently amended) The method in accordance with Claim 37, wherein the ~~expansion~~ expanding step is performed ~~on~~ by a throttle valve.

42. (currently amended) The method in accordance with Claim 37, ~~wherein~~ further comprising providing a coolant setting valve ~~is provided~~ in the coolant flow regulation path to set the coolant mass flow.

43. (canceled)

44. (currently amended) The method in accordance with Claim 42, ~~wherein~~ further comprising the step of measuring the air/fuel temperature, the exhaust gas temperature at the engine exhaust, the air/fuel mass or quantity respectively and the exhaust gas mass or quantity respectively ~~are measured~~.

45. (currently amended) Method in accordance with Claim 44, ~~wherein~~ further comprising calculating the induction gas temperature ~~is calculated~~ in accordance with equation

$$T_{ASG} = \frac{\dot{m}_{FG} T_{FG} C_{p,FG} + \dot{m}_{AG} T_{AG} C_{p,AG}}{\dot{m}_{FG} C_{p,FG} + \dot{m}_{AG} C_{p,AG}}, \text{ with}$$

$\dot{m}_{FG}$: Air/fuel mass flow

$\dot{m}_{AG}$: Exhaust gas mass flow

T_{FG}: Air/fuel temperature

T_{AG}: Exhaust gas temperature

T_{ASG}: Induction gas temperature

$c_{p,FG}$: Heat capacity of the air/fuel mixture

$C_{p,AG}$: Heat capacity of the exhaust gas.

46. (currently amended) The method in accordance with Claim 42, ~~wherein~~ further comprising calculating the exhaust gas temperature at the heat exchanger outlet ~~is calculated~~ using the following equation system:

$$\left|\Delta\dot{Q}_{KM}\right| = \left|\Delta\dot{Q}_{AG}\right| = \dot{Q}_{WT};$$

$$\Delta\dot{Q}_{KM} = \dot{m}_{KM} C_{p,KM}\left(T_{KM,OUT} - T_{KM,IN}\right);$$

$$\Delta\dot{Q}_{AG} = \dot{m}_{AG} C_{p,AG}\left(T_{AG,IN} - T_{AG,OUT}\right);$$

$$\dot{Q}_{WT} = kA\Delta T_m$$

with

$\dot{Q}$: Heat flow

KM: Coolant

AG: Exhaust gas

WT: Heat exchanger

C_p: Heat capacity

k: Heat transfer coefficient of the heat exchanger

A: Heating surface of the heat exchanger

ΔT_m Mean logarithmic temperature difference.